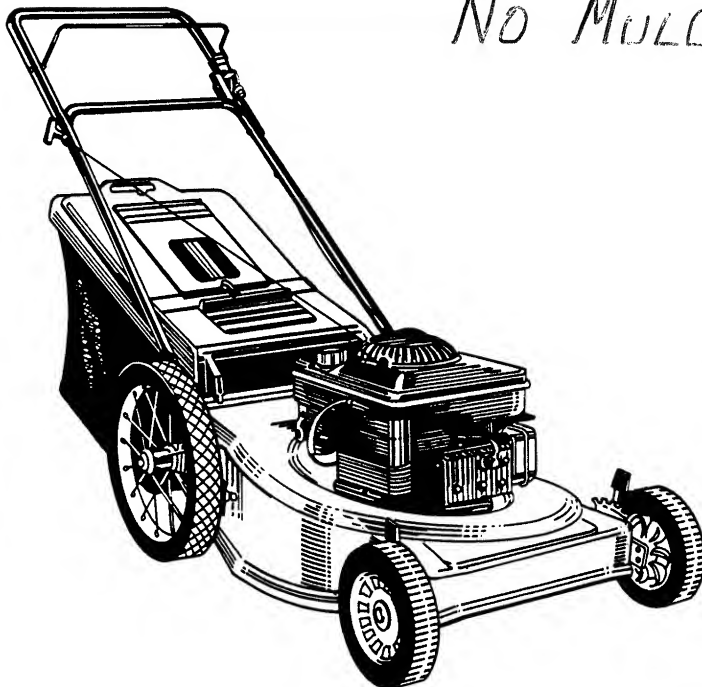


OWNER'S GUIDE

• ASSEMBLY • OPERATION • MAINTENANCE • PARTS •



*NO MULCHER KIT AVAILABLE
21"*

ROTARY MOWERS

Model Numbers

112-515R000

112-516R000

112-518R000

*190-076-000 HARD CATCHER
190-078-000 SOFT CATCHER*

IMPORTANT!

Record the **Model No.** and **Mfg. Code** which appear on your unit in the space below. You **must** have these numbers, along with the date of purchase, in order to receive warranty or service.

MEETS ANSI SAFETY STANDARDS

MODEL NO.

MFG. CODE

Important:
Read Safety Rules
and Instructions Carefully



Made
in
AMERICA


WARNING: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 360900, Cleveland, Ohio 44136.

IMPORTANT

RULES FOR SAFE OPERATION



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR LAWN MOWER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— HEED ITS WARNING.



DANGER

Your lawn mower was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.



TRAINING

1. Read this owner's guide carefully in its entirety before attempting to assemble or operate this machine. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Your rotary mower is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times.
3. Never allow children to operate a power mower. Only persons well acquainted with these rules of safe operation should be allowed to use your mower.
4. Keep the area of operation clear of all persons, particularly small children and pets. Stop engine when they are in the vicinity of your mower to help prevent blade contact or thrown object injury. Although the area of operation should be completely cleared of foreign objects, an object may have been overlooked and could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.



PREPARATION

1. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones and other foreign objects which could be picked up and thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.
2. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.
3. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts to avoid entanglement in the moving parts. Never operate a unit in bare feet, sandals, or sneakers.
4. Check the fuel before starting the engine. Gasoline is an extremely flammable fuel. Do not fill the gasoline tank indoors, while the engine is running, or until engine has been allowed to cool for two minutes after running. Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
5. Disengage the self-propelled mechanism or drive clutch on units so equipped before starting the engine.
6. The blade control handle is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating blade. The blade control handle must operate easily in both directions.
7. Never attempt to make a wheel or cutting height adjustment while the engine is running.
8. Never operate the equipment in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. Keep a firm hold on the handle and walk, never run. Mow only in daylight or in good artificial light.

9. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.



OPERATION

1. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
2. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times as the rotating blade can cause injury.
3. Stop the blade when crossing gravel drives, walks or roads.
4. After striking a foreign object, stop the engine, remove the wire from the spark plug, and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
5. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
6. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute. The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
7. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
8. Do not run the engine indoors.
9. Mow across the face of slopes, never up-and-down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes. Always be sure of your footing. A slip and fall can cause serious personal injury.
10. Never operate mower without proper guards, plates or other safety protective devices in place.
11. Do not operate this mower with the chute door open, unless the complete grass catcher or chute deflector is properly mounted on the mower.



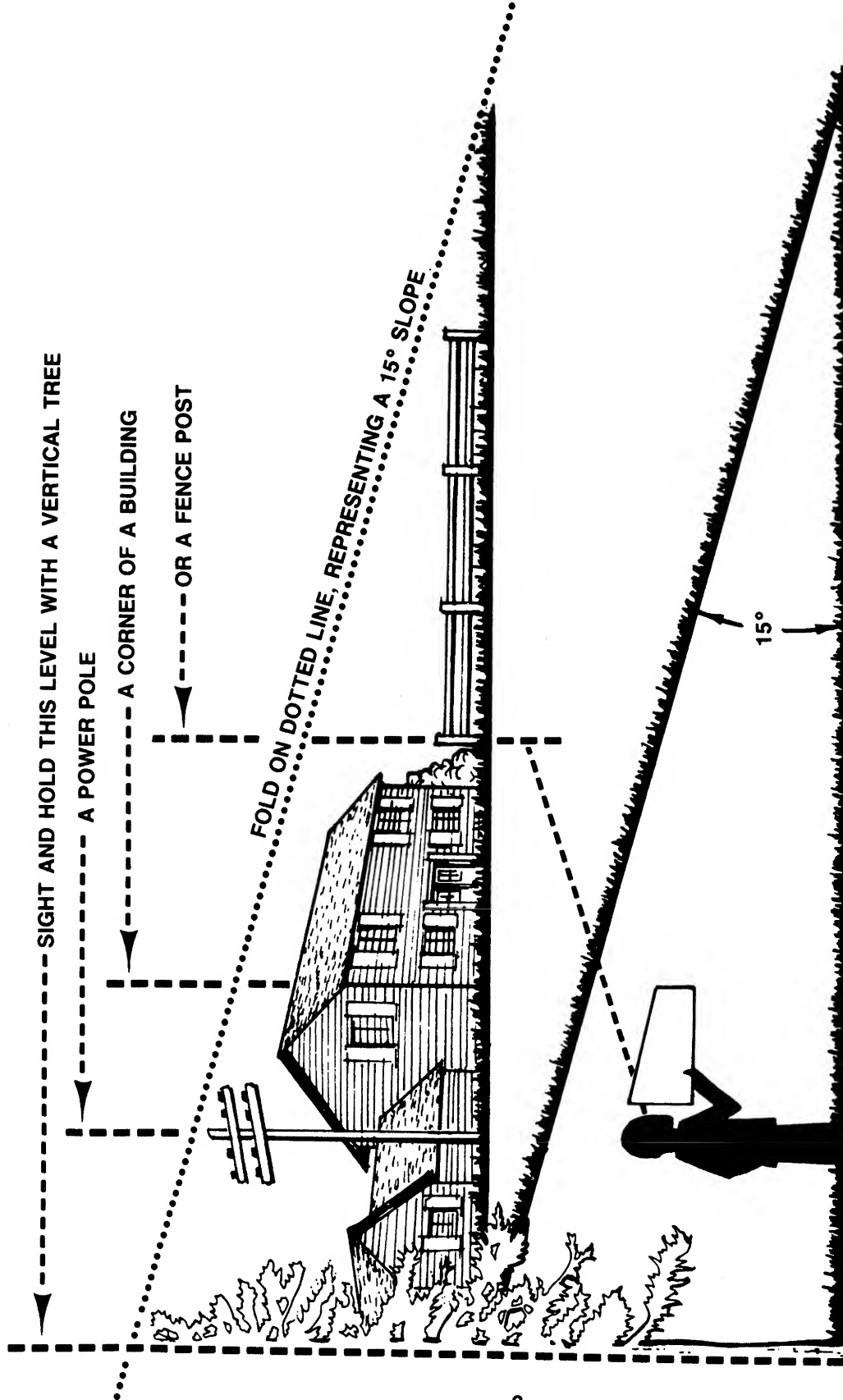
MAINTENANCE AND STORAGE

1. Check the blade and engine mounting bolts at frequent intervals for proper tightness.
2. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
3. Never store the equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
4. To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
5. Check the grass catcher bag frequently for wear or deterioration. For safety protection, replace only with new bag meeting original equipment specifications.

USE THIS SHEET AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)



Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.

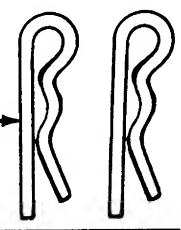
Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

CONTENTS OF HARDWARE PACK

Remove this sheet from your owner's manual and lay the hardware on the illustration for identification purposes. After assembly, keep the Slope Gauge which is on the reverse side of this sheet for future use.

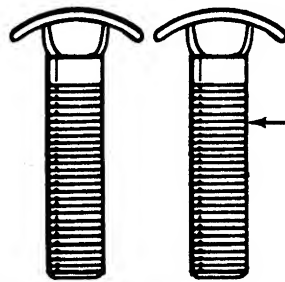
(Hardware pack may contain extra items which are not used on your unit. Part numbers are shown in parentheses.)

A ATTACHING THE LOWER HANDLE

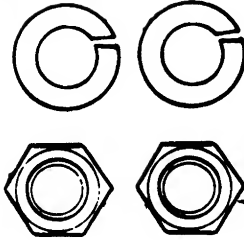


Hairpin Clips (714-0104)

B ATTACHING THE UPPER HANDLE



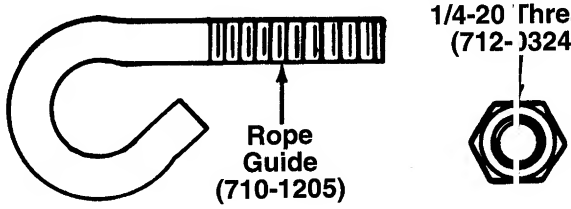
Curved Head Bolts (710-0671)



Split Washers 5/16" I.D. (736-0119)

Hex Nuts 5/16-18" thread (712-0267)

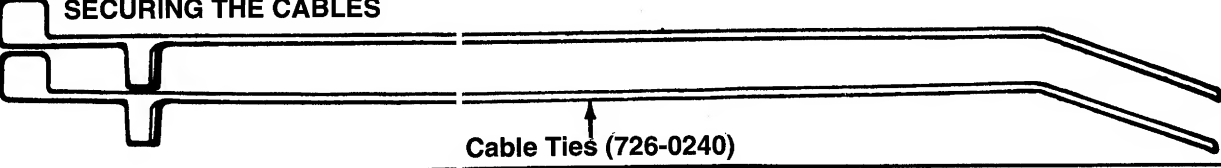
C ATTACHING THE STARTER ROPE



Rope Guide (710-1205)

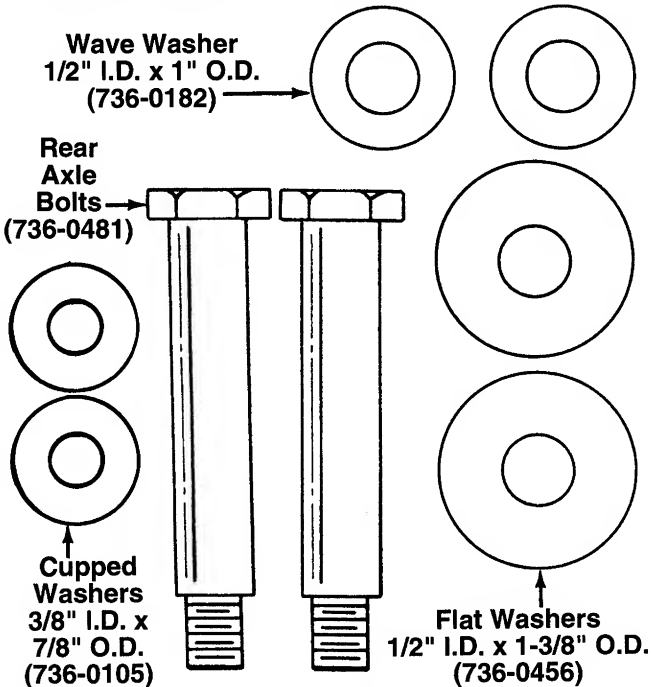
Hex Lock Nut 1/4-20 Thread (712-1324)

D SECURING THE CABLES



Cable Ties (726-0240)

E ASSEMBLY OF GRASS CATCHER



Shoulder Bolt (738-0137)

Wave Washer 3/8" I.D. (736-0286)

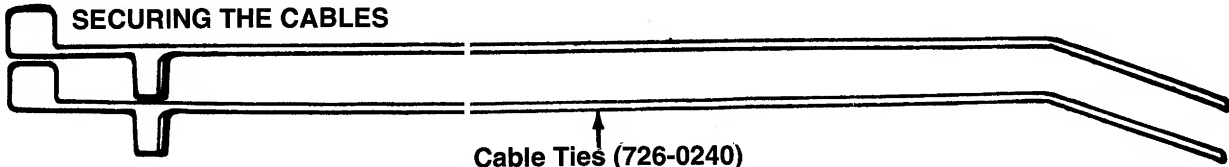
Internal "Star" Washer 1/4" I.D. (736-0498)

Flat Washer 1/4" I.D. x 5/8" O.D. (736-0463)

Self-Tapping Screws (710-0892)

Locking Lever (720-0224)

F ATTACHING THE REAR WHEELS
(This hardware shown approximately one-half size.)



Wave Washer 1/2" I.D. x 1" O.D. (736-0182)

Rear Axle Bolts (736-0481)

Cupped Washers 3/8" I.D. x 7/8" O.D. (736-0105)

Flat Washers 1/2" I.D. x 1-3/8" O.D. (736-0456)

Cut Along This Line



ASSEMBLY INSTRUCTIONS

IMPORTANT: This unit is shipped **WITHOUT GASOLINE or OIL**. After assembly, service engine with gasoline and oil as instructed in the separate engine manual packed with your unit.

NOTE: Reference to right or left hand side of the mower is observed from the operating position.

Tools Required for Assembly

- (1) Pair of Pliers
- (1) 1/2" Wrench*
- (1) Adjustable Wrench*
- (1) Phillips Screwdriver

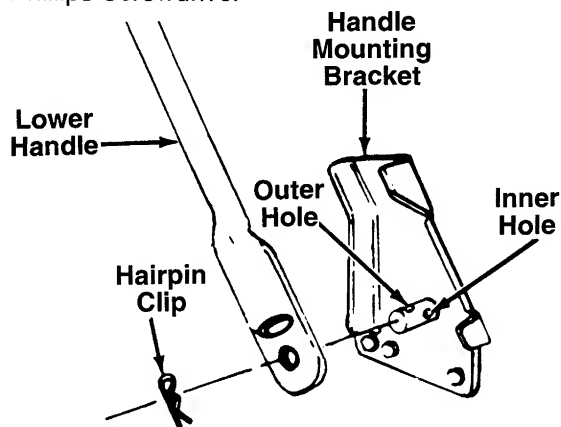


FIGURE 1.

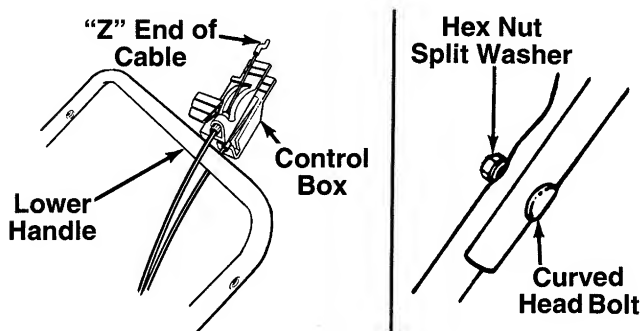


FIGURE 2.

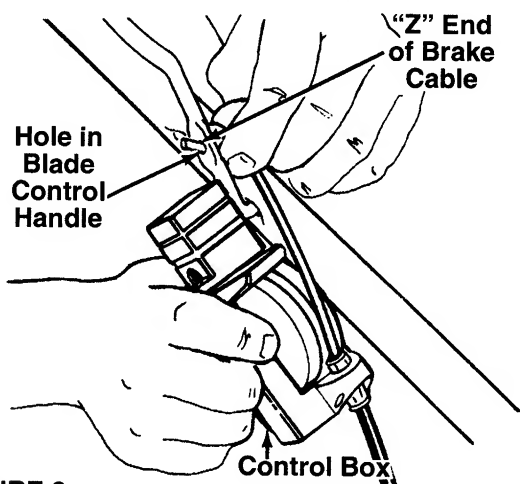


FIGURE 3.

UNPACKING

1. Remove the lawn mower from the carton by opening the top flaps and lifting the unit out. Be careful of the staples. Make certain all parts and literature have been removed from the carton before the carton is discarded.
2. Disconnect the spark plug wire and move away from the spark plug.
3. Stretch out the control cables (with control box attached) to the **left** side of the mower and place on the floor. Be careful not to bend or kink the cables at any time during assembly.
4. Remove page four from this manual and lay the contents of the hardware pack on the illustration for identification.

ATTACHING THE LOWER HANDLE (Hardware A)

1. Attach the lower handle by placing the bottom holes in the lower handle over the weld pins on the handle mounting brackets on the rear of the deck. The extra hole in the upper part of lower handle must be on the **right** side of the unit.
2. Using a pair of pliers, squeeze one leg of the lower handle against the handle mounting bracket. Insert the hairpin clip into the inner hole on the weld pin. See figure 1. Repeat on other side.

NOTE: There are two (2) holes in the handle mounting brackets. Place the hairpin clip in the inner hole for operation. Outer hole is for storage.

ATTACHING THE UPPER HANDLE (Hardware B)

1. Slide the control box over the lower handle so that the cable with the "Z" end is routed above the lower handle, and the other cable is routed below. See figure 2.
2. Place the upper handle in position over the lower handle. The hole in the side of the blade control handle (attached to the upper handle) must be on the **left** side. Make certain the blade control handle is on top of the upper handle.
3. Secure the upper handle using the curved head bolts, split washers and hex nuts as shown in figure 2. Tighten securely.

ATTACHING THE CONTROL BOX

Attach the control box to the upper handle as follows.

1. Remove the truss machine screw and hex lock nut from the middle of the control box using a phillips' screwdriver. (Hold your finger over the hex lock nut so it stays inside the control box so you can unscrew the truss machine screw.)
2. Holding the control box near the left side of the upper handle (control box must be inside the handle), hook the "Z" end of the brake cable into the control handle from the outside to the inside. See figure 3.

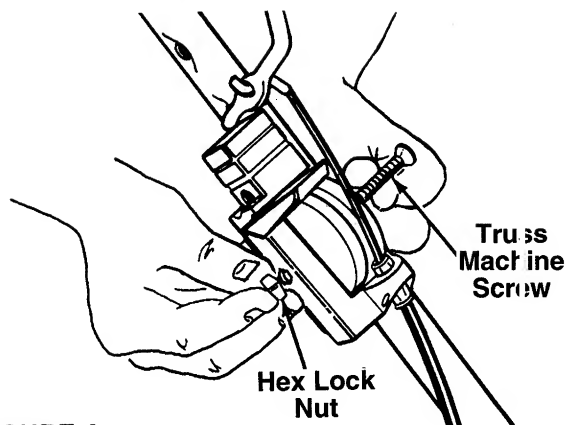


FIGURE 4.

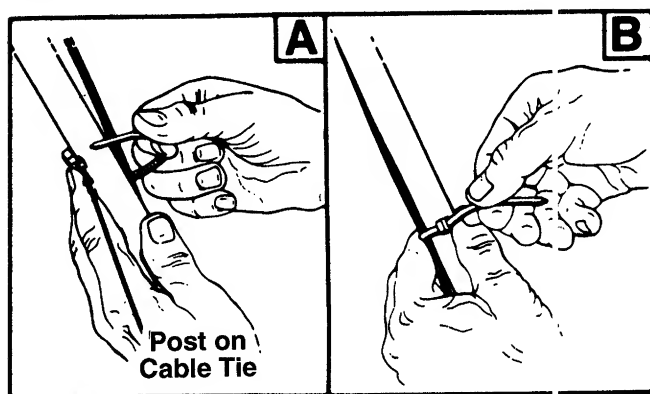


FIGURE 5.

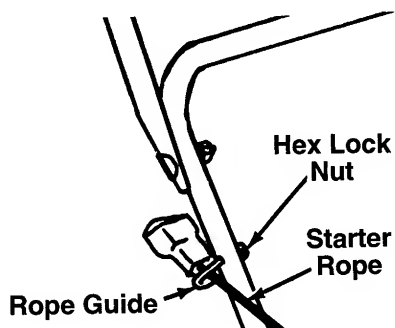


FIGURE 6.

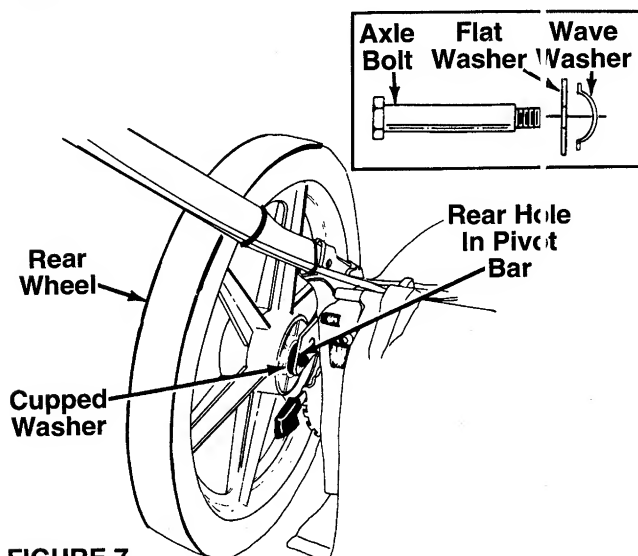


FIGURE 7.

3. Place the control box on the upper handle just below the end of the control handle as shown in figure 4. Secure with hardware removed in step one by placing hex lock nut into the indent on the inside of the control box. Screw the truss machine screw into the hex lock nut.

SECURING THE CABLES (Hardware D)

Secure all cables to the left side of the handle as follows.



WARNING: When attaching the control cables, the cables must be routed to avoid contact with all sharp edges and hot surfaces to prevent damage to the cables, which will render the controls inoperative.

1. Insert posts on cable ties into holes provided on the lower handle. The holes may be either on the inside or outside of the handles. See figure 5A.
2. Secure the cables with the cable ties. See figure 5B. Trim excess ends of cable ties.

ATTACHING THE STARTER ROPE (Hardware C)

1. The starter rope is inside the top of the engine. Additional rope may be wound around the starter handle. If so, unwind the rope from the handle.
2. With the spark plug wire disconnected and grounded, depress the blade control handle and pull the rope out of the engine.

3. Place the rope guide around the starter rope, so the rope guide is positioned as shown (bends downward slightly). Insert the rope guide through the right side of the lower handle, and secure with hex lock nut. See figure 6.

ATTACHING THE REAR WHEELS (Hardware F)

Assemble the rear wheels as follows. See figure 7.

1. Move the wheel height adjusters so the deck is in the lowest cutting position.
2. Lift the rear of the unit up and block securely.
3. Place one large flat washer on axle bolt, then the wave washer (cupped side against the flat washer as shown in figure 7, inset).
4. Insert axle bolt through one rear wheel. Place cupped washer on axle bolt (crowned side of washer goes against the wheel).
5. Thread axle bolt into rear hole of pivot bar. Tighten securely.
6. Assemble other rear wheel in the same manner.

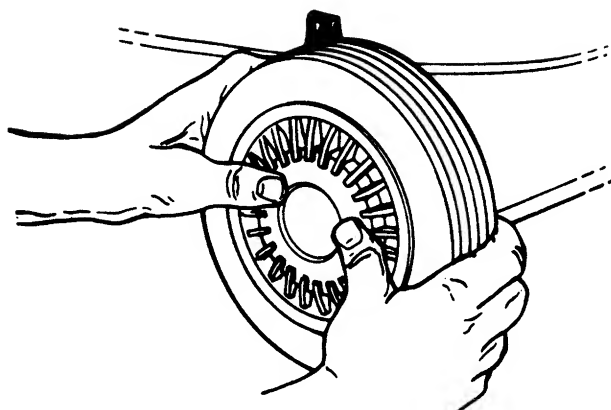


FIGURE 8.—Optional Hub Caps

INSTALLATION OF HUB CAPS (Optional)

1. If your mower is equipped with hub caps which have four tabs, line up the tabs on the hub caps with the holes in the wheels. Push to lock in position.
2. If your mower is equipped with 2" wide tires, place hub caps in position against the inner hub of the wheel. Press firmly around the center portion of hub cap in a circular motion, similar to installing a lid on a round, plastic container. See figure 8. The hub caps are flexible and will snap over the 3-1/2" diameter wheel hubs.

NOTE: It may be helpful to place the hub caps in hot tap water for several minutes to make them pliable before installing, especially if the temperature is less than 60° F.

3. For other types of hub caps, simply press into place on wheel hub.

FINAL ASSEMBLY OF MOWER

Make certain **all** nuts and bolts are tightened securely.

ASSEMBLY OF GRASS CATCHER (Hardware E)

NOTE: Make certain the grass bag is turned right side out before assembling (warning label will be on the outside).

1. There are three holes in the rear frame. With the holes on the upper side as shown in figure 9A, insert one end of the rear frame into the cloth channel on the edge of the grass catcher bag. Feed all the material on one side of the frame, then work it around the frame. See figure 9B.

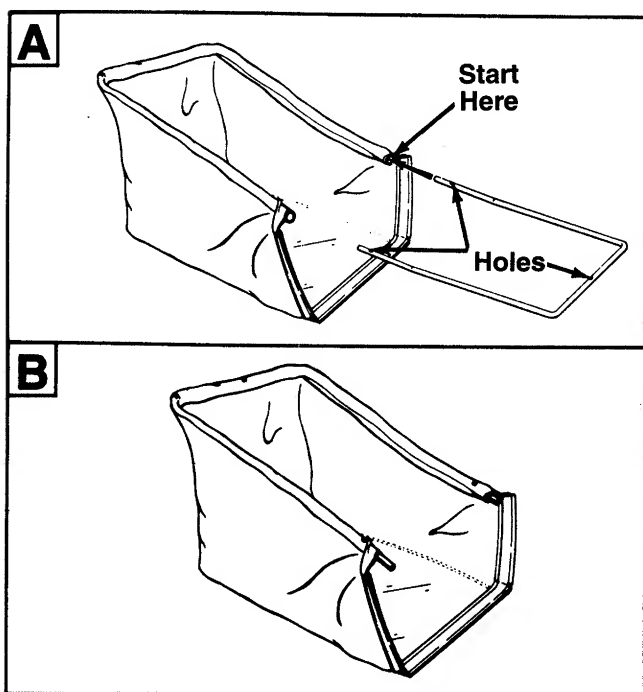


FIGURE 9.

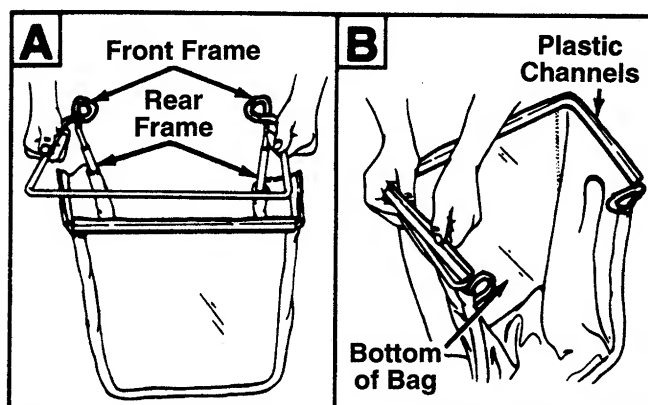


FIGURE 10.

2. Slide the ends of the front frame assembly into the ends of the rear frame as shown in figure 10A.
3. Secure front of bag to front frame by slipping plastic channels on sides and bottom of bag over frame. See figure 10B.

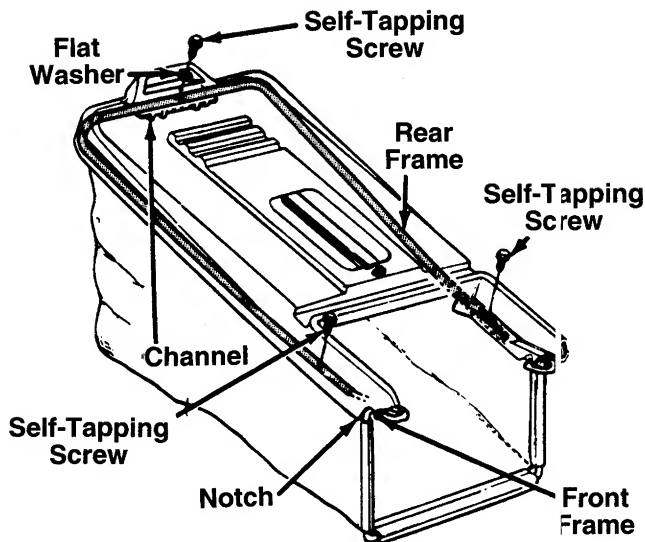


FIGURE 11.

4. Attach the hardtop cover to the grass catcher as follows. See figure 11.
 - a. Place the cover in position on top of the grass catcher. Press the rear frame into the channel on the rear of the cover (beneath the rear handle).
 - b. Slide the notches on the sides of the cover over the front catcher frame.
 - c. Attach rear of cover to frame using the flat washer and one self-tapping screw as shown in figure 11. Attach the sides of the cover to frame with the other two self-tapping screws.

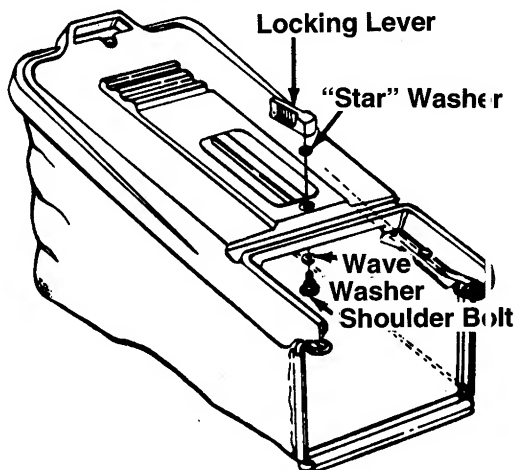


FIGURE 12.

5. Assemble the locking lever as follows:
 - a. Place wave washer on shoulder bolt (crowned side of washer goes against the head of bolt).
 - b. Insert shoulder bolt up through hole in hardtop cover as shown in figure 12. Place "star" washer over shoulder bolt.
 - c. Thread shoulder bolt into the grass catcher locking lever, using a 9/16" socket wrench. Do not overtighten. Locking lever must be able to pivot.

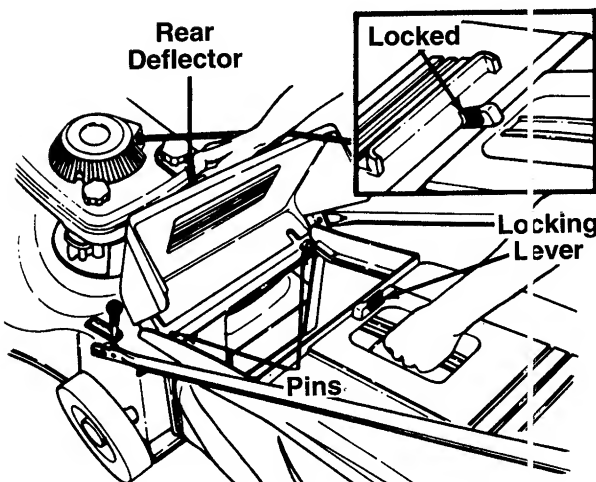


FIGURE 13.

ATTACHING BAG TO MOWER

Lift the rear deflector on the mower. Place the loops on the grass catcher frame over the pins on the back of the mower. See figure 13. Release the rear deflector. Turn the locking lever to the locked position to secure the rear deflector. See figure 13, inset.

To remove the grass catcher, turn the locking lever to the unlocked position and lift the rear deflector on the mower. Lift the grass catcher up, over the pins on the back of the mower. Release the deflector.

CONTROLS

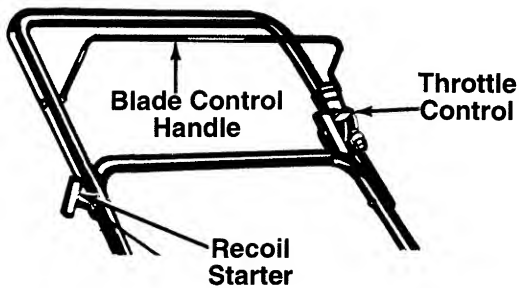


FIGURE 14.

BLADE CONTROL HANDLE



WARNING: This control mechanism is a safety device. Never attempt to bypass its operations.

The blade control handle is located on the upper handle of the mower. See figure 14. The blade control

handle must be depressed in order to operate the unit. Release the blade control handle to stop the engine and blade.



WARNING: The blade will be rotating whenever the engine is running.

THROTTLE CONTROL

The throttle control is located on the side of the upper handle. It is used to regulate the engine speed.



WARNING: The throttle control cannot be used to stop the engine.

RECOIL STARTER

The recoil starter handle is attached to the handle. See figure 14. Stand behind the unit in the operating position to start the unit.

OPERATION



FIGURE 15.

Keep hands and feet away from the chute area on cutting deck. See figure 15.

The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields. We recommend wide vision safety mask for over spectacles or standard safety glasses.



NOTE: For shipping purposes your mower is set with the wheels in a low cutting height position. For best results raise the cutting position until it is determined which height is best for your lawn. See cutting height adjustment section.

GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your mower. **Read instructions carefully.**



WARNING: Never fill fuel tank indoors, with engine running or until the engine has been allowed to cool for at least two minutes after running.

TO START ENGINE AND ENGAGE BLADE

1. Attach spark plug wire to spark plug. If unit is equipped with a rubber boot over the end of the spark plug wire, make certain the metal loop on the end of the spark plug wire (inside the rubber boot) is fastened securely over the metal tip on the spark plug. See figure 16.

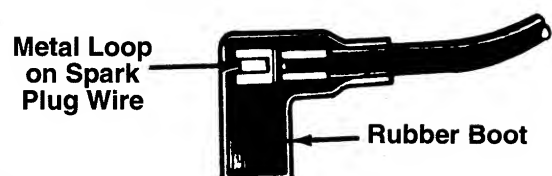


FIGURE 16.

2. Move throttle control lever all the way forward.
3. If engine is equipped with a primer, prime engine as instructed in the separate engine manual packed with your unit.
4. Standing behind the unit, depress the blade control handle and hold it against the upper handle as shown. See figure 17.
5. Grasp the recoil starter handle and pull back rapidly, extending rope fully. Return it slowly to the rope guide.
6. After engine starts, move throttle control to desired engine speed.

NOTE: If any problems are encountered, refer to the *Trouble Shooting Guide* on page 16.

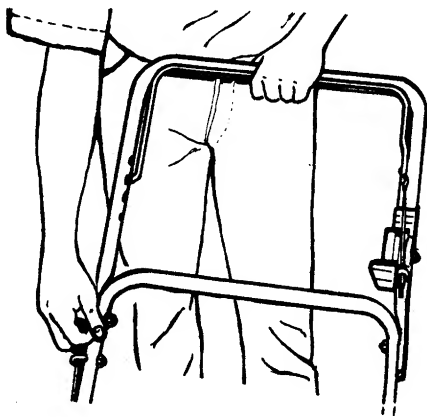


FIGURE 17.

TO STOP ENGINE AND BLADE

1. Move throttle control lever to SLOW position.
2. Release the blade control handle to stop the engine and blade.



WARNING: The blade continues to rotate for a few seconds after the engine is shut off.

3. Disconnect the spark plug wire and ground it against the engine to prevent accidental starting while equipment is unattended.

USING YOUR ROTARY MOWER



WARNING: Never operate your unit without either the rear deflector or entire grass catcher assembly in place.

Be sure that lawn is clear of stones, sticks, wire, or other objects which could damage lawn mower or engine. Such objects could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator and others.

For the best results, do not cut wet grass because it tends to stick to the underside of the mower, preventing proper discharge of grass clippings, and could cause you to slip and fall. New grass, thick grass or wet grass may require a narrower cut. Blade speed should be adjusted to the condition of the lawn.

For best results, cut off one-third or less of the total length of the grass. Lawn should be cut in the fall as long as there is growth.

This mower is designed to be operated at full throttle to give you the best cut and do the most effective job of bagging the cut grass.



WARNING: If you strike a foreign object, stop the engine. Remove wire from spark plug, thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower. Extensive vibration of the mower during operation is an indication of damage. The unit should be promptly inspected and repaired.

ADJUSTMENTS



WARNING: Do not at any time make any adjustment to lawn mower without first stopping engine and disconnecting spark plug wire.

CUTTING HEIGHT ADJUSTMENT

An adjusting plate and thumb lever at each wheel position provides cutting height adjustment. Each adjusting plate has nine height positions. Height of cut will be changed when the thumb lever is moved from one hole to another. Simply depress the lever towards wheel and move wheel and lever assembly to desired position. All wheels must be placed in the same relative position. See figure 18.

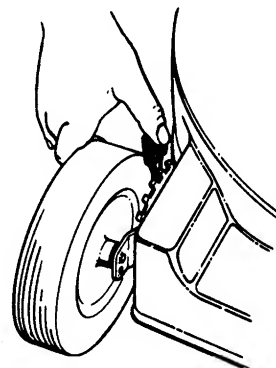


FIGURE 18.

THROTTLE CONTROL ADJUSTMENT

If the throttle control requires adjustment or if it has been replaced, adjust as follows.

1. Remove the screw shown in figure 19. Remove the cable clamp from the cable.

NOTE: If you have a Tecumseh engine, simply loosen the screw shown in figure 19B so the cable will move freely beneath the clamp. It is not necessary to remove the screw and clamp completely.

2. Push the throttle control lever on the handle all the way forward as far as it will go, then back it off **one "click"**. Make certain the throttle control lever remains in this position.
3. Push the control lever on the engine as far toward the **rear** of the engine as it will go. Secure the cable in this position with the cable clamp and screw.

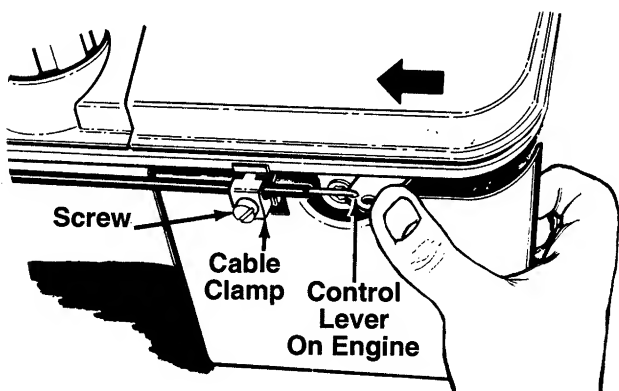


FIGURE 19A.—Briggs & Stratton Quantum Engines

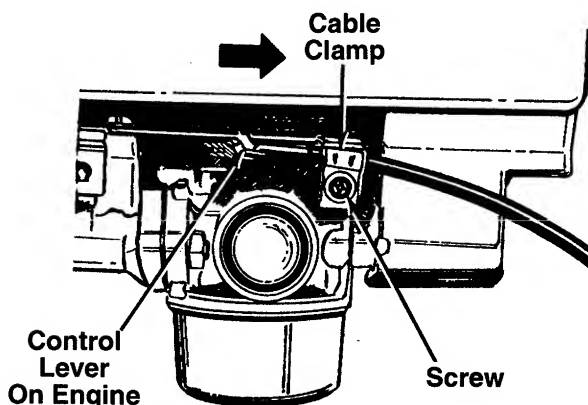


FIGURE 19B.—Tecumseh Engines

CARBURETOR ADJUSTMENTS



WARNING: If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustments may be required to compensate for differences in fuel, temperature, altitude and load. To adjust carburetor, refer to the separate engine manual packed with your mower.

NOTE: A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor. Refer to the separate engine manual.

LUBRICATION



WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on lawn mower.

Blade Control—Lubricate the pivot points on the blade control handle and the brake cable at least once a season with light oil. See figure 20. The blade control must operate freely in both directions.

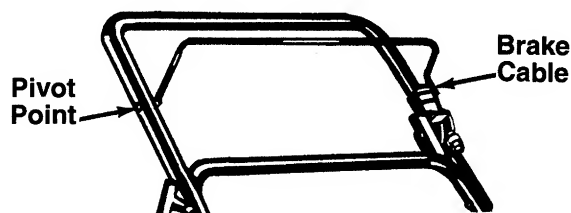


FIGURE 20.

Discharge Chute Deflector—The torsion spring and pivot point should be lubricated periodically with light oil to prevent any rust or binding. Deflector must work freely.

Wheels—Mower may be provided with ball bearing wheels. Lubricate at least once a season with light oil. Also, if the wheels are removed for any reason, lubricate the surface of the axle bolt and the inner surface of the wheel with light oil. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

Engine—Follow engine manual for lubrication instructions.

MAINTENANCE



WARNING: Be sure to disconnect and ground the spark plug wire before performing any repairs or maintenance.

NOTE: When tipping the unit, empty the fuel tank and keep engine spark plug or muffler side up.

TROUBLE SHOOTING

Refer to page 16 of this manual for trouble shooting information.

CUTTING BLADE

When removing the cutting blade for sharpening or replacement, protect hands by using heavy gloves or a rag to grasp the cutting blade. Remove the bolt and bell washer which hold the blade and adapter to the engine crankshaft. Remove the blade and adapter from the crankshaft.

If the blade or blade adapter needs replacing, remove the two small bolts, lock washers and nuts which hold the blade to the adapter.



WARNING: Periodically inspect the blade adapter for cracks, especially if you strike a foreign object. Replace when necessary.

When sharpening the blade, follow the original angle of grind as a guide. It is extremely important that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade. An unbalanced blade will cause excessive vibration when rotating at high speeds, may cause damage to the mower and could break, causing personal injury.

It is recommended that the blade always be removed from the adapter for the best test of balance.

The blade can be tested by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly.

Before reassembling the blade and the blade adapter to the unit, lubricate the engine crankshaft and the inner surface of the blade adapter with light oil. Lubricating the bolt holes, bolts and inner surface of the nuts with light oil is also recommended. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

When replacing the blade, be sure to install the blade with the side of the blade marked "Bottom" (or with part number) facing the ground when the mower is in the operating position.

Blade Mounting Torque

Center Bolt: 450 in. lbs. min., 600 in. lbs. max.

Blade Adapter Bolts: 200 in. lbs. min., 350 in. lbs. max.

To insure safe operation of your unit, all nuts and bolts must be checked periodically for correct tightness.

DECK

The underside of the mower deck should be cleaned after each use to prevent a buildup of grass clippings, leaves, dirt or other matter. If this debris is allowed to accumulate, it will invite rust and corrosion, and may cause an uneven discharge of grass clippings at the next cutting.

The deck may be cleaned by tilting the mower and scraping clean with a suitable tool (make certain the spark plug wire is disconnected).

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every 25 hours under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

The **spark plug** should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season; check engine manual for correct plug type and gap specifications.

Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all grass, dirt and combustible debris from muffler area.

OFF-SEASON STORAGE

The following steps should be taken to prepare lawn mower for storage.

1. Clean and lubricate mower thoroughly as described in the lubrication instructions.
2. Refer to engine manual for correct engine storage instructions.
3. Coat mower's cutting blade with chassis grease to prevent rusting.
4. Store mower in a dry, clean area. Do not store next to corrosive materials, such as fertilizer.

NOTE: When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust-proof the equipment. Using a light oil or silicone, coat the equipment, especially cables and all moving parts.

HANDLE STORAGE

The handle may be placed in an upright position for storage. Move hairpin clips to outer hole on weld pins. See figure 1. Press outward on the bottom of the lower handle and push forward. The handle will lock in this position.

To place the handle in the operating position, remove the starter rope from the rope guide. Grasp the lower handle at the bottom, press outward slightly and tip the handle backward. Place the hairpin clips in the inner holes. With the spark plug wire disconnected and grounded, depress the blade control handle and pull the starter rope out from the engine. Slip the starter rope into the rope guide.

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

NOTE: The engine is not under warranty by the mower manufacturer. . .If repairs or service is needed on the engine, please contact your nearest authorized engine service outlet. Check the "Yellow Pages" of your telephone book under "Engines-Gasoline."



CODE: N notates a **new part** (not previously existing). A three digit number is the **color code**. Specify color code as shown below if color or finish is important when ordering parts. [i.e., 638 for Red Finish].

Color Codes

456—Radiant Tangerine	637—Black
460—Green Flake	638—Red
483—Charcoal Gray	640—Green
498—Yellow	646—CM Blue
499—Beige	657—Teal
629—Silver Flake	

**FRONT WHEEL CHART

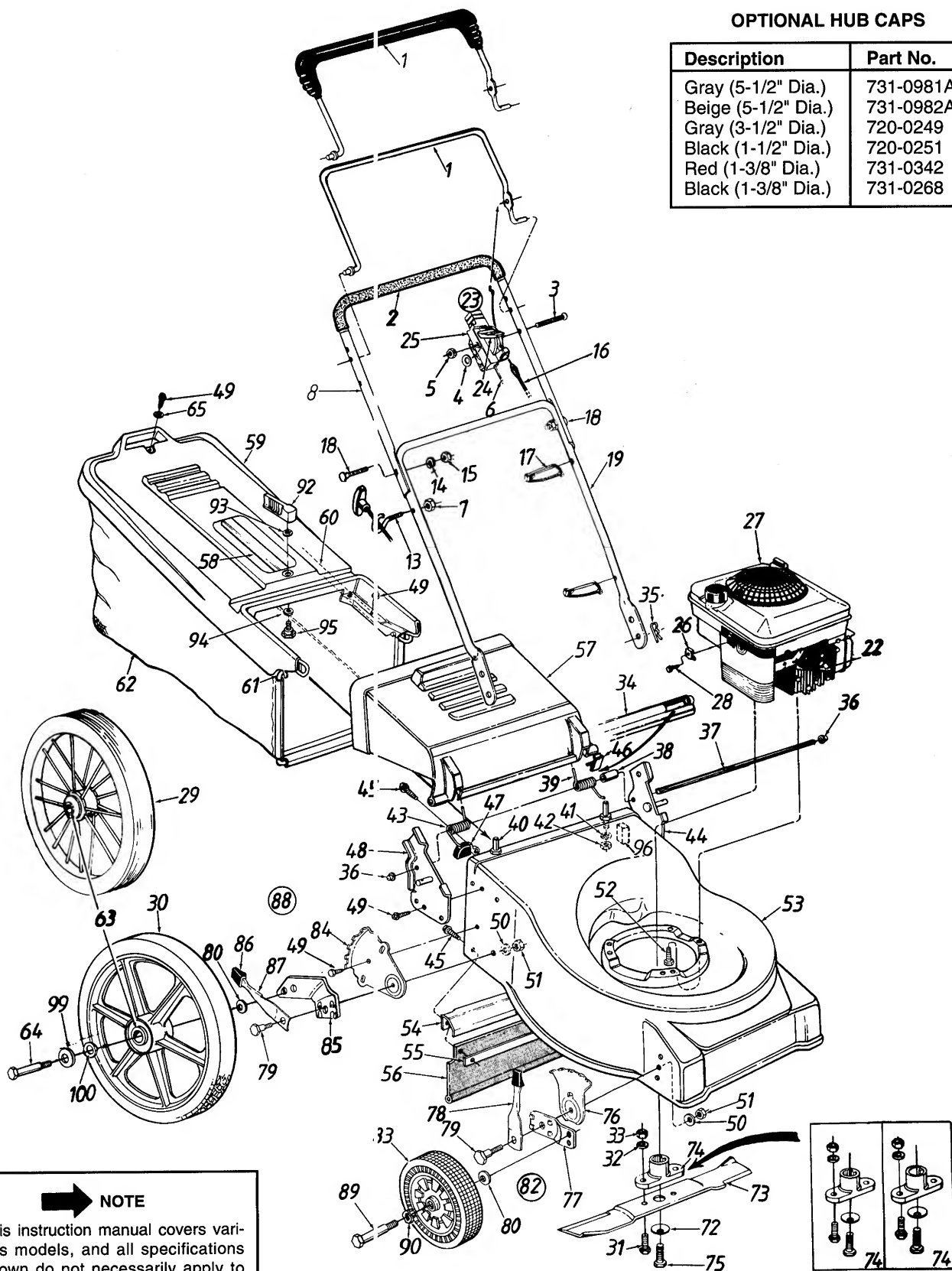
Wheel w/o Bearings			Wheels With Bearings			
Tread***	Ass'y. Comp.	Axle Bolt	Tread***	Ass'y. Comp.	Bearings	Axle Bolt
Diamond	734-1698 (7") 734-1697 (8")	738-0102 738-0102	"S" Wave	734-1513B (Gray)	Ball Brg. 1/2" I.D.-741-0180 (2 per Wheel)	738-0102
				734-1517B (Beige)	Ball Brg. 1/2" I.D.-741-0180 (2 per Wheel)	738-0102
Waffle	734-1162A (8")	738-0102	"T" Tread	734-1259	Ball Brgs. 3/8" I.D.-741-0267, 1/2" I.D.-741-0484, Spacer 750-0434	710-1020
"S" Wave	734-1512A (8")	738-0102		734-1260	Ball Brg. 1/2" I.D.-741-0180 (2 per Wheel)	738-0102
Rib	734-1169 (8")	738-0144	Waffle	734-0645	Ball Brgs. 3/8" I.D.-741-0267, 1/2" I.D.-741-0484, Spacer-750-0434	710-1020
Bar	734-1609 (7") 634-0020 (8" x 1.75") 734-1608 (8" x 2")	738-0102 738-0102 738-0102				

***Tread Type: Waffle ; Rib ; Bar ; "T" Tread ; "S" Wave ; Diamond

Models 515R, 516R and 518R

OPTIONAL HUB CAPS

Description	Part No.
Gray (5-1/2" Dia.)	731-0981A
Beige (5-1/2" Dia.)	731-0982A
Gray (3-1/2" Dia.)	720-0249
Black (1-1/2" Dia.)	720-0251
Red (1-3/8" Dia.)	731-0342
Black (1-3/8" Dia.)	731-0268



NOTE

This instruction manual covers various models, and all specifications shown do not necessarily apply to your model. Specifications subject to change without notice or obligation.

Models 515R, 516R and 518R

PARTS LIST FOR MODELS 515R, 516R AND 518R ROTARY MOWERS

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
1	747-0824	N	Control Handle Ass'y. (Std.)	50	736-0356		Bell-Wash. .39" I.D.
	647-0004	N	Control Handle Ass'y. (Deluxe)	51	712-0798		Hex Nut 3/8-16 Thd.*
2	720-0226		Foam Grip (Optional)	52	710-0654A		Hex L-Wash. Hd. Scr.
3	710-0605	N	Oval C-Sunk Scr.				3/8-16 x 1" Lg.
4	736-0501	N	Spr. Wash. .66" I.D.	53	16998A	638/N	21" Deck Ass'y.
5	712-0291		Hex L-Nut 1/4-20 Thd.	54	17014		Chute Baffle
6	746-0843	N	Throttle Cable—55" (B&S)	55	17003		Retaining Strip 14.25" Lg.
	746-0845	N	Throttle Cable—45" (Tec.)	56	731-0669		Rear Flap 17.30" Lg.
7	712-0324		Hex L-Nut 1/4-20 Thd.	57	731-0859		Rear Chute Deflector
8	749-0438B		Upper Handle	58	731-0856A		Hardtop Handle
13	710-1205		Rope Guide	59	731-0857A		Hardtop Bag Cover
14	736-0119		L-Wash. 5/16" I.D.*	60	749-0736A		Rear Catcher Frame
15	712-0267		Hex Nut 5/16-18 Thd.*	61	764-0411		Front Catcher Frame
16	746-0554		Control Cable—40.5" (B&S)	62	764-0252		Grass Bag
	746-0555		Control Cable—55" (Tec.)	63	741-0484		Bearing (2 Per Wheel)
17	726-0240		Cable Tie	64	738-0481		Shld. Bolt .5 Dia. x 2.62"
18	710-0671		Curved Carriage Bolt 5/16-18 x 1.38" Lg.	65	736-0463		Fl-Wash. .281" I.D.
				72	736-0453		Bell-Wash. .46" I.D. (Splined)
19	749-0504C		Lower Handle		736-0452		Bell-Wash. .39" I.D. (Keyed)
22	735-0639		Spark Plug Boot (Optional)	73	742-0306A		21" Blade
23	811-00185	N	Throttle Box Comp. (Incl. Ref. 3, 4, 5, 24, 25)	74	753-0485		Blade Adapter Kit (Splined)
					753-0484		Blade Adapter Kit (Keyed)
24	746-0876	N	Throttle Lever	75	710-0757		Hex Bolt 7/16-20 x 1.5" Lg.
25	746-0875	N	Throttle Body		710-1044		Hex Bolt 3/8-24 x 1.5" (Keyed)
26	751-0568	N	Cable Clamp (B&S)	76	15261A		Height Adj. Plate
27	—		Engine	77	15262B		Pivot Bar
28	710-1237	N	Hex Self-Tap Scr. #10-32 x .62" Lg. (B&S)	78	14832		Spring Lever Ass'y. w/Knob
29	734-1661		Wheel Ass'y. Comp.—Steel Rim	79	738-0507B		Shld. Bolt .50" Dia. x .357"
30	734-1653		Wheel Ass'y. Comp.—Plastic Rim	80	736-0105		Bell-Wash. .38" I.D. x .88" O.D.
				82	14578		Height Adj. Ass'y. Comp.—R.H.
					14579		Height Adj. Ass'y.
31	710-1055		Hex Bolt 3/8-24 x 1"				Comp.—L.H. (Not Shown)
32	736-0169		L-Wash. 3/8" I.D.	83	**		Front Wheel Ass'y. Comp.
33	712-0241		Hex Nut 3/8-24 Thd.	84	14764C		Index Plate
34	731-0858		Seal—Extrusion	85	17488		Pivot Bar—R.H.
35	714-0104		Int. Cotter Pin 5/16" Dia.		17489		Pivot Bar—L.H. (Not Shown)
36	726-0106		Cap Speed Nut	86	720-0190		Spring Lever Knob
37	747-0698B		Hinge Pin 17.75" Lg.	87	732-0417A		Spring Lever
38	750-0566		Spacer .255" I.D.	88	17490		Rear Height Adj. Ass'y.
39	732-0577A		Torsion Spring—L.H.				Comp.—R.H.
40	711-0805		Shld. Pin 3/8-24 x 1.43" Lg.		17491		Rear Height Adj. Ass'y.
41	736-0169		L-Wash. 3/8" I.D.*				Comp.—L.H. (Not Shown)
42	712-0711		Hex Jam Nut 3/8-24 Thd.	89	**		Front Axle Bolt
43	732-0578A		Torsion Spring—R.H.	90	736-0232		Wave Wash. .53" I.D. x .78"
44	12297A		Handle Brkt. Ass'y.—L.H.				O.D. (Used w/Ball Brg.)
45	710-1017		Torx Mach. AB-Tap Scr. 1/4 x .62" Lg.	92	720-0224		Grass Catcher Locking Knob
46	731-0970B		Deflector Plug	93	736-0498		Internal L-Wash. 1/4" I.D.
47	731-0931		Corner Plug	94	736-0286		Wave Washer 3/8" I.D.
48	12296A		Handle Brkt. Ass'y.—R.H.	95	738-0137		Shld. Bolt .342" Dia. x .268"
49	710-0892		Hex L-Wash. AB-Tap Scr. 1/4 x .62" Lg.	96	731-0564		Plug
				99	736-0456		Fl-Wash. .51" I.D. x 1.373"
				100	736-0182		Spr. Wash. .5" I.D. x 1" O.D.

TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> 1. Blade control handle disengaged. 2. Spark plug wire disconnected. 3. Throttle control lever not in CHOKE or START position. 4. Fuel tank empty, or stale fuel. 5. Blocked fuel line. 6. Faulty spark plug. 7. Engine flooded. 	<ol style="list-style-type: none"> 1. Engage blade control handle. 2. Connect wire to spark plug. 3. Move throttle lever to CHOKE or START position. 4. Fill tank with clean, fresh gasoline. 5. Clean fuel line. 6. Clean, adjust gap or replace. 7. Remove spark plug, dry the plug, and crank engine with plug removed and throttle in off position. Replace spark plug, connect wire and resume starting procedures.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running in START position 2. Spark plug wire loose. 3. Blocked fuel line or stale fuel. 4. Vent in gas cap plugged. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move throttle lever to FAST position 2. Connect and tighten spark plug wire. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Clear vent. 5. Drain fuel tank. Refill with fresh fuel. 6. Clean air cleaner.† 7. Adjust carburetor.†
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Remove blower housing and clean.† 3. Adjust carburetor.†
Occasional skip (hesitates) at high speed	<ol style="list-style-type: none"> 1. Spark plug gap too close. 2. Carburetor idle mixture adjustment improperly set. 	<ol style="list-style-type: none"> 1. Adjust gap to .030". 2. Adjust carburetor.†
Idles poorly	<ol style="list-style-type: none"> 1. Spark plug fouled, faulty or gap too wide. 2. Carburetor improperly adjusted. 3. Dirty air cleaner. 	<ol style="list-style-type: none"> 1. Reset gap to .030" or replace spark plug. 2. Adjust carburetor.† 3. Clean air cleaner.†
Excessive vibration	<ol style="list-style-type: none"> 1. Cutting blade loose or unbalanced. 2. Bent cutting blade. 	<ol style="list-style-type: none"> 1. Tighten blade and adapter. Balance blade. 2. Replace blade.
Mower will not discharge grass	<ol style="list-style-type: none"> 1. Engine speed too low. 2. Wet grass. 3. Excessively high grass. 	<ol style="list-style-type: none"> 1. Set throttle between 3/4 and full throttle. 2. Do not mow when grass is wet; wait until later to cut. 3. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath (1/2 width).
Uneven cut	<ol style="list-style-type: none"> 1. Wheels not positioned correctly. 2. Dull blade. 	<ol style="list-style-type: none"> 1. Place all four wheels in same height position. 2. Sharpen or replace blade.

†Refer to separate engine manual packed with your unit.

Note: For repairs beyond the minor adjustments listed above, contact your local authorized service dealer.

FOR REPLACEMENT PARTS, CONTACT:
SERVICE DEPARTMENT • P.O. BOX 360900 • CLEVELAND, OHIO 44136